CHANGE IN INDUSTRIAL GAS DEMAND

MMcf	2004	2005	2006	2007	2008
AL	1,117	-228	338	1,659	-629
AZ	50	91	559	505	189
AR	4,178	6,373	6,973	4,043	3,821
CA	-6,369	-17,369	-607	-2,538	-13,232
CO	-141	485	-790	1,012	-1,807
CT	32	-173	-72	-328	-490
DE	85	72	268	153	211
DC	0	0	0	0	0
FL	2,607	3,054	6,095	5,354	4,173
GA	3,668	4,296	7,412	7,533	5,233
ID	-148	64	635	368	29
IL	-282	-1,317	4,618	3,731	1,135
IN	-276	-1,291	4,527	3,657	1,054
IA	-627	-1,157	460	123	-671
KS	2,063	3,011	3,995	2,434	2,011
KY	656	-338	762	885	-275
LA	28,196	42,630	46,569	27,000	25,079
ME	2	-12	-5	-22	-33
MD	795	918	1,879	1,624	1,139
MA	100	-546	-228	-1,037	-1,546
MI	472	-264	5,762	5,284	3,051
MN	-671	-1,203	314	-37	-825
MS	1,202	-248	1,981	1,774	593
MO	-132	-362	729	624	244
MT	-6	154	322	230	146
NE	-79	-249	610	538	252
NV	-55	190	886	553	548
NH	5	-27	-11	-50	-75
NJ	-312	-858	710	-1,004	-358
NM	1,789	2,583	3,003	1,257	146
NY	-427	-1,176	759	-1,433	-409
NC	2,662	3,178	5,753	5,508	4,463
ND	-33	4	434	348	187
OH	536	-303	6,653	6,000	3,457
OK	3,528	5,150	6,832	4,162	3,440
OR	-527	1,273	-702	-2,167	-3,227
PA	772	497	2,847	1,266	2,305
RI	27	-148	-62	-280	-418
SC	2,418	2,886	5,166	5,002	4,025
SD	-39	-72	29	8	-42
TN	913	-471	1,061	1,233	-384
TX	41,717	64,970	67,436	23,936	13,864
UT	-55	188	802	586	314
VT	2	-11	-5	-21	-32
VA	1,592	1,840	3,739	3,254	2,332
WA	-733	1,797	-893	-3,001	-4,199
WV	1,077	1,285	2,442	2,228	1,863
WI	-491	-1,111	1,539	979	-394
WY	-174	288	1,531	1,007	457
US	91,689	121,031	205,051	115,302	57,993

CHANGE IN POWER GENERATION GAS DEMAND

MMcf	2004	2005	2006	2007	2008
AL	-7,292	-17,506	-922	-53,928	-47,251
AZ	4,919	6,250	22,140	5,152	9,948
AR	4,637	-2,365	5,346	1,844	2,409
CA	-41,332	-107,921	-134,976	-210,744	-255,315
CO	4,699	6,455	14,260	3,807	8,198
CT	-3,400	-5,531	-8,615	-12,781	-15,981
DE	-1,819	-4,473	-9,895	-18,711	-31,726
DC	0	0	0	0	0
FL	-3,472	-25,496	-34,201	-74,709	-91,475
GA	-10,901	-25,624	-1,660	-64,510	-55,548
ID	-1,498	-1,563	-2,073	-4,351	-4,187
IL	-1,901	-2,286	-7,000	-14,703	-15,298
IN	6,944	6,216	10,342	11,694	8,693
IA	-389	-843	-1,587	-2,664	-3,363
KS	1,441	-503	1,727	457	689
KY	-3,811	-8,635	-506	-20,974	-17,989
LA	9,625	-4,601	8,355	482	403
ME	0	0	0	0	0
MD	-1,464	-2,533	-1,304	-7,855	-7,872
MA	-11,774	-19,156	-29,838	-44,264	-55,350
MI	8,226	6,564	10,887	13,408	9,270
MN	-1,151	-2,234	-3,305	-4,589	-5,909
MS	22,909	-6,199	18,788	11,535	9,801
MO	-3,305	-6,079	-9,442	-13,371	-17,347
MT	-1,493	-2,571	-3,979	-5,607	-7,580
NE	-549	-1,023	-1,537	-2,186	-2,820
NV	-10,592	-24,133	-47,842	-63,367	-79,972
NH	-206	-335	-521	-773	-967
NJ	-3,738	-1,231	-12,733	-17,644	-30,892
NM	-374	853	1,150	-1,574	-13
NY	-1,870	-892	-5,176	-38,014	-44,280
NC	-4,057	-10,232	-714	-26,055	-22,125
ND	-6	-10	-16	-22	-30
OH	12,307	10,491	14,584	16,616	12,754
OK	7,911	-2,763	9,485	2,508	3,784
OR	-11,472	-8,191	-14,703	-25,022	-24,270
PA	-2,931	-3,817	-9,957	-18,959	-32,360
RI	-4,182	-6,804	-10,598	-15,722	-19,659
SC	-3,225	-8,916	-182	-22,116	-18,809
SD	-117	-254	-478	-803	-1,014
TN	-3,317	-7,517	-441	-18,258	-15,660
TX	-80,248	-15,527	-124,404	-193,097	-232,148
UT	-3,548	-1,801	-4,740	-5,341	-6,266
VT	-14	-24	-37	-54	-68
VA	-909	-3,043	511	-8,578	-7,619
WA	-6,032	-2,641	-7,369	-10,160	-10,361
WV	2,245	2,468	3,916	4,281	3,392
WI	-339	-348	-864	-1,892	-1,908
WY	-355	-409	-549	-837	-1,048
US	-147,216	-306,732	-370,670	-952,447	-1,115,164

CHANGE IN RESIDENTIAL GAS PRICE
Real$/Mcf

	2004	2005	2006	2007	2008
AL	-0.68	-1.21	-1.13	-0.87	-0.75
AZ	-0.72	-1.20	-1.12	-0.84	-0.78
AR	-0.67	-1.21	-1.12	-0.85	-0.73
CA	-0.75	-1.19	-1.11	-0.84	-0.86
CO	-0.70	-1.09	-0.91	-0.49	-0.58
CT	-0.62	-1.16	-1.11	-0.88	-0.77
DE	-0.66	-1.22	-1.15	-0.88	-0.77
DC	-0.67	-1.21	-1.14	-0.88	-0.77
FL	-0.71	-1.19	-1.11	-0.88	-0.77
GA	-0.65	-1.19	-1.11	-0.81	-0.68
ID	-0.69	-1.15	-0.98	-0.64	-0.73
IL	-0.65	-1.18	-1.10	-0.82	-0.72
IN	-0.66	-1.21	-1.14	-0.87	-0.76
IA	-0.65	-1.16	-1.07	-0.78	-0.70
KS	-0.68	-1.19	-1.09	-0.81	-0.73
KY	-0.64	-1.21	-1.14	-0.85	-0.73
LA	-0.69	-1.22	-1.13	-0.86	-0.75
ME	-0.69	-1.24	-1.19	-0.95	-0.85
MD	-0.67	-1.21	-1.14	-0.87	-0.76
MA	-0.69	-1.24	-1.19	-0.95	-0.85
MI	-0.67	-1.20	-1.12	-0.84	-0.73
MN	-0.64	-1.16	-1.08	-0.79	-0.66
MS	-0.66	-1.19	-1.11	-0.84	-0.73
MO	-0.66	-1.19	-1.10	-0.82	-0.75
MT	-0.69	-1.16	-1.07	-0.79	-0.73
NE	-0.66	-1.14	-1.04	-0.74	-0.75
NV	-0.70	-1.14	-1.01	-0.71	-0.84
NH	-0.69	-1.24	-1.18	-0.95	-0.84
NJ	-0.65	-1.21	-1.15	-0.88	-0.77
NM	-0.71	-1.21	-1.12	-0.85	-0.82
NY	-0.67	-1.21	-1.15	-0.89	-0.78
NC	-0.64	-1.21	-1.15	-0.89	-0.76
ND	-0.69	-1.16	-1.08	-0.80	-0.72
OH	-0.65	-1.20	-1.13	-0.86	-0.75
OK	-0.68	-1.19	-1.09	-0.81	-0.73
OR	-0.67	-1.15	-1.07	-0.81	-0.68
PA	-0.65	-1.21	-1.14	-0.87	-0.76
RI	-0.69	-1.23	-1.18	-0.94	-0.84
SC	-0.63	-1.21	-1.15	-0.89	-0.76
SD	-0.65	-1.17	-1.08	-0.78	-0.70
TN	-0.65	-1.21	-1.14	-0.87	-0.75
TX	-0.68	-1.18	-1.10	-0.81	-0.70
UT	-0.67	-1.07	-0.87	-0.45	-0.55
VT	-0.70	-1.25	-1.20	-0.96	-0.86
VA	-0.66	-1.20	-1.13	-0.86	-0.75
WA	-0.67	-1.16	-1.08	-0.83	-0.69
WV	-0.66	-1.22	-1.15	-0.88	-0.76
WI	-0.65	-1.18	-1.10	-0.82	-0.70
WY	-0.68	-1.07	-0.86	-0.45	-0.54
US	-0.67	-1.19	-1.11	-0.83	-0.74

CHANGE IN COMMERCIAL GAS PRICE
Real$/Mcf

	2004	2005	2006	2007	2008
AL	-0.74	-1.21	-1.12	-0.86	-0.76
AZ	-0.81	-1.20	-1.11	-0.83	-0.80
AR	-0.71	-1.21	-1.11	-0.84	-0.74
CA	-0.85	-1.19	-1.09	-0.84	-0.88
CO	-0.72	-1.09	-0.90	-0.50	-0.58
CT	-0.71	-1.20	-1.13	-0.90	-0.81
DE	-0.69	-1.22	-1.15	-0.88	-0.77
DC	-0.73	-1.21	-1.13	-0.87	-0.77
FL	-0.81	-1.19	-1.10	-0.86	-0.78
GA	-0.71	-1.19	-1.10	-0.81	-0.71
ID	-0.72	-1.14	-0.97	-0.64	-0.73
IL	-0.68	-1.19	-1.11	-0.83	-0.73
IN	-0.67	-1.21	-1.14	-0.86	-0.76
IA	-0.67	-1.17	-1.08	-0.78	-0.70
KS	-0.76	-1.19	-1.07	-0.80	-0.74
KY	-0.68	-1.21	-1.13	-0.85	-0.74
LA	-0.74	-1.21	-1.11	-0.85	-0.75
ME	-0.75	-1.24	-1.17	-0.93	-0.85
MD	-0.73	-1.21	-1.13	-0.86	-0.77
MA	-0.75	-1.24	-1.17	-0.93	-0.84
MI	-0.68	-1.20	-1.12	-0.84	-0.73
MN	-0.67	-1.17	-1.09	-0.80	-0.68
MS	-0.73	-1.20	-1.10	-0.84	-0.74
MO	-0.69	-1.19	-1.09	-0.81	-0.75
MT	-0.70	-1.16	-1.07	-0.79	-0.73
NE	-0.80	-1.10	-0.96	-0.73	-0.72
NV	-0.78	-1.12	-0.98	-0.71	-0.84
NH	-0.75	-1.24	-1.17	-0.94	-0.85
NJ	-0.71	-1.22	-1.14	-0.88	-0.79
NM	-0.81	-1.21	-1.11	-0.85	-0.84
NY	-0.77	-1.22	-1.14	-0.88	-0.81
NC	-0.73	-1.21	-1.13	-0.87	-0.77
ND	-0.70	-1.16	-1.08	-0.80	-0.72
OH	-0.66	-1.20	-1.13	-0.86	-0.75
OK	-0.76	-1.19	-1.07	-0.80	-0.74
OR	-0.72	-1.15	-1.08	-0.82	-0.71
PA	-0.68	-1.21	-1.14	-0.87	-0.77
RI	-0.74	-1.24	-1.17	-0.93	-0.84
SC	-0.76	-1.21	-1.11	-0.86	-0.77
SD	-0.67	-1.17	-1.08	-0.78	-0.71
TN	-0.69	-1.22	-1.13	-0.86	-0.76
TX	-0.79	-1.19	-1.09	-0.81	-0.73
UT	-0.69	-1.07	-0.88	-0.46	-0.56
VT	-0.76	-1.25	-1.18	-0.94	-0.85
VA	-0.72	-1.20	-1.12	-0.85	-0.76
WA	-0.72	-1.16	-1.09	-0.84	-0.72
WV	-0.71	-1.22	-1.14	-0.87	-0.77
WI	-0.66	-1.18	-1.10	-0.82	-0.71
WY	-0.69	-1.07	-0.87	-0.46	-0.55
US	-0.72	-1.18	-1.09	-0.83	-0.75

CHANGE IN INDUSTRIAL GAS PRICE
Real$/Mcf

	2004	2005	2006	2007	2008
AL	-0.87	-1.20	-1.08	-0.83	-0.76
AZ	-0.90	-1.20	-1.09	-0.83	-0.80
AR	-0.85	-1.20	-1.06	-0.82	-0.76
CA	-0.91	-1.23	-1.13	-0.87	-0.92
CO	-0.86	-1.05	-0.81	-0.51	-0.55
CT	-0.91	-1.24	-1.12	-0.90	-0.86
DE	-0.86	-1.22	-1.10	-0.86	-0.80
DC	0.00	0.00	0.00	0.00	0.00
FL	-0.88	-1.20	-1.16	-0.86	-0.80
GA	-0.90	-1.20	-1.10	-0.84	-0.79
ID	-0.86	-1.11	-0.95	-0.71	-0.75
IL	-0.83	-1.18	-1.06	-0.81	-0.75
IN	-0.85	-1.21	-1.10	-0.85	-0.78
IA	-0.85	-1.16	-1.04	-0.78	-0.74
KS	-0.88	-1.18	-1.05	-0.80	-0.75
KY	-0.86	-1.21	-1.09	-0.83	-0.77
LA	-0.85	-1.20	-1.06	-0.82	-0.76
ME	-0.91	-1.25	-1.13	-0.91	-0.86
MD	-0.90	-1.21	-1.12	-0.85	-0.80
MA	-0.91	-1.25	-1.13	-0.91	-0.86
MI	-0.83	-1.19	-1.08	-0.82	-0.76
MN	-0.86	-1.18	-1.07	-0.82	-0.75
MS	-0.86	-1.20	-1.08	-0.83	-0.76
MO	-0.86	-1.17	-1.04	-0.79	-0.76
MT	-0.86	-1.16	-1.05	-0.81	-0.75
NE	-0.86	-1.14	-1.01	-0.77	-0.74
NV	-0.86	-1.11	-0.96	-0.74	-0.89
NH	-0.92	-1.25	-1.13	-0.91	-0.87
NJ	-0.87	-1.23	-1.11	-0.88	-0.82
NM	-0.90	-1.21	-1.09	-0.84	-0.86
NY	-0.86	-1.22	-1.11	-0.88	-0.84
NC	-0.90	-1.21	-1.11	-0.85	-0.80
ND	-0.86	-1.17	-1.06	-0.82	-0.75
OH	-0.82	-1.20	-1.09	-0.84	-0.77
OK	-0.88	-1.18	-1.05	-0.80	-0.75
OR	-0.87	-1.18	-1.08	-0.83	-0.78
PA	-0.85	-1.21	-1.10	-0.86	-0.79
RI	-0.90	-1.23	-1.12	-0.89	-0.85
SC	-0.90	-1.21	-1.11	-0.85	-0.80
SD	-0.86	-1.18	-1.06	-0.81	-0.76
TN	-0.87	-1.21	-1.09	-0.84	-0.77
TX	-0.89	-1.19	-1.06	-0.82	-0.75
UT	-0.86	-1.05	-0.83	-0.51	-0.59
VT	-0.94	-1.28	-1.15	-0.94	-0.90
VA	-0.89	-1.20	-1.11	-0.85	-0.80
WA	-0.87	-1.17	-1.07	-0.84	-0.78
WV	-0.89	-1.21	-1.11	-0.85	-0.79
WI	-0.85	-1.20	-1.10	-0.84	-0.77
WY	-0.85	-1.04	-0.81	-0.50	-0.56
US	-0.87	-1.19	-1.07	-0.81	-0.77

CHANGE IN POWER GENERATION GAS PRICE
Real$/Mcf

	2004	2005	2006	2007	2008
AL	-0.87	-1.25	-1.23	-0.84	-0.85
AZ	-0.99	-1.24	-1.03	-0.83	-0.77
AR	-1.00	-1.21	-1.03	-0.83	-0.76
CA	-0.95	-1.22	-1.11	-0.86	-0.89
CO	-0.99	-1.01	-0.77	-0.55	-0.55
CT	-0.86	-1.21	-1.04	-0.85	-0.81
DE	-1.03	-1.30	-1.32	-0.91	-1.01
DC	0.00	0.00	0.00	0.00	0.00
FL	-0.92	-1.20	-1.12	-0.85	-0.82
GA	-0.88	-1.26	-1.24	-0.85	-0.85
ID	-0.80	-1.08	-1.08	-0.70	-0.87
IL	-1.10	-1.19	-1.05	-0.81	-0.89
IN	-1.02	-1.34	-0.96	-0.84	-0.70
IA	1.43	-7.80	-6.16	-5.87	-5.21
KS	-1.03	-1.18	-1.02	-0.83	-0.76
KY	-0.85	-1.22	-1.27	-0.81	-0.87
LA	-0.98	-1.19	-1.03	-0.84	-0.76
ME	-0.89	-1.26	-1.08	-0.94	-0.86
MD	-0.98	-1.23	-1.17	-0.86	-0.85
MA	-0.89	-1.25	-1.08	-0.93	-0.85
MI	-0.99	-1.29	-0.93	-0.82	-0.69
MN	0.30	-6.96	-5.77	-5.16	-4.59
MS	-1.05	-1.21	-1.04	-0.85	-0.75
MO	0.36	-6.24	-5.02	-4.50	-4.06
MT	-0.86	-1.13	-1.07	-0.71	-0.75
NE	0.06	-5.82	-4.78	-4.30	-3.90
NV	-0.95	-1.13	-0.94	-0.82	-0.96
NH	-0.89	-1.26	-1.09	-0.95	-0.86
NJ	-1.10	-1.28	-1.05	-0.90	-0.89
NM	-0.99	-1.21	-1.08	-0.85	-0.91
NY	-1.03	-1.28	-1.03	-0.89	-0.83
NC	-0.89	-1.29	-1.26	-0.87	-0.87
ND	-0.85	-1.11	-1.05	-0.68	-0.72
OH	-0.96	-1.28	-0.94	-0.83	-0.69
OK	-1.03	-1.18	-1.00	-0.82	-0.76
OR	-0.72	-0.95	-1.05	-0.56	-0.71
PA	-1.02	-1.28	-1.27	-0.91	-0.98
RI	-0.88	-1.25	-1.08	-0.93	-0.85
SC	-0.91	-1.28	-1.26	-0.87	-0.87
SD	0.67	-7.14	-5.68	-5.40	-4.86
TN	-0.88	-1.29	-1.24	-0.86	-0.85
TX	-0.97	-1.20	-1.01	-0.82	-0.77
UT	-0.76	-0.98	-0.75	-0.41	-0.53
VT	-0.91	-1.28	-1.10	-0.97	-0.89
VA	-1.00	-1.23	-1.25	-0.85	-0.91
WA	-0.73	-1.02	-1.06	-0.60	-0.72
WV	-0.94	-1.28	-0.95	-0.84	-0.70
WI	-1.12	-1.18	-1.05	-0.82	-0.88
WY	-0.77	-0.92	-0.70	-0.37	-0.50
US	-0.95	-1.22	-1.11	-0.86	-0.87

CHANGE IN RESIDENTIAL GAS CONSUMER COSTS
Millions of $

	2004	2005	2006	2007	2008
AL	-38	-64	-60	-48	-43
AZ	-35	-55	-52	-43	-42
AR	-39	-64	-60	-50	-47
CA	-500	-745	-696	-571	-587
CO	-106	-159	-138	-87	-104
CT	-39	-64	-62	-54	-51
DE	-8	-13	-13	-10	-10
DC	-12	-21	-20	-16	-15
FL	-13	-20	-19	-15	-14
GA	-107	-185	-174	-132	-117
ID	-18	-28	-25	-18	-21
IL	-406	-672	-633	-504	-469
IN	-137	-232	-221	-176	-162
IA	-62	-103	-96	-74	-70
KS	-57	-93	-85	-65	-61
KY	-52	-92	-87	-69	-63
LA	-40	-67	-62	-50	-46
ME	-1	-2	-2	-1	-1
MD	-74	-120	-115	-95	-89
MA	-115	-184	-179	-155	-149
MI	-296	-506	-475	-372	-333
MN	-112	-188	-178	-140	-125
MS	-27	-43	-41	-35	-34
MO	-91	-152	-140	-107	-102
MT	-17	-28	-26	-20	-19
NE	-33	-54	-49	-36	-37
NV	-29	-46	-42	-32	-38
NH	-7	-12	-11	-10	-9
NJ	-192	-333	-321	-264	-245
NM	-34	-54	-51	-42	-43
NY	-382	-621	-600	-506	-477
NC	-52	-91	-87	-71	-64
ND	-10	-15	-14	-11	-11
OH	-278	-474	-447	-355	-323
OK	-54	-88	-81	-62	-58
OR	-40	-64	-61	-51	-47
PA	-239	-395	-378	-314	-295
RI	-18	-30	-29	-25	-24
SC	-22	-40	-38	-31	-28
SD	-10	-17	-16	-12	-12
TN	-56	-97	-92	-74	-67
TX	-177	-283	-267	-215	-199
UT	-53	-78	-67	-46	-53
VT	-3	-4	-4	-4	-3
VA	-73	-119	-115	-97	-92
WA	-69	-112	-107	-89	-80
WV	-22	-38	-36	-28	-25
WI	-121	-201	-191	-153	-142
WY	-14	-19	-17	-12	-14
US	-4,391	-7,188	-6,779	-5,446	-5,159

CHANGE IN COMMERCIAL GAS CONSUMER COSTS
Millions of $

	2004	2005	2006	2007	2008
AL	-20	-30	-27	-20	-17
AZ	-29	-41	-36	-27	-26
AR	-28	-44	-40	-31	-28
CA	-241	-328	-294	-230	-243
CO	-50	-70	-58	-33	-39
CT	-43	-69	-65	-53	-50
DE	-4	-7	-7	-5	-5
DC	-16	-24	-22	-17	-15
FL	-43	-60	-53	-41	-37
GA	-43	-67	-59	-42	-36
ID	-11	-17	-14	-10	-11
IL	-165	-260	-235	-175	-158
IN	-69	-115	-106	-79	-70
IA	-34	-55	-49	-36	-33
KS	-32	-45	-39	-27	-25
KY	-29	-48	-43	-32	-28
LA	-21	-31	-28	-20	-18
ME	-3	-4	-4	-3	-3
MD	-50	-77	-70	-54	-50
MA	-76	-113	-106	-88	-85
MI	-141	-236	-218	-165	-146
MN	-74	-121	-110	-82	-71
MS	-19	-28	-26	-20	-19
MO	-48	-75	-66	-47	-43
MT	-11	-16	-15	-11	-10
NE	-23	-30	-24	-17	-17
NV	-23	-32	-28	-20	-24
NH	-8	-13	-12	-10	-9
NJ	-142	-230	-215	-171	-159
NM	-27	-38	-35	-28	-29
NY	-344	-517	-478	-382	-359
NC	-34	-53	-48	-36	-32
ND	-9	-13	-12	-9	-8
OH	-135	-229	-210	-158	-139
OK	-34	-50	-43	-30	-28
OR	-26	-39	-36	-28	-25
PA	-115	-190	-177	-137	-123
RI	-13	-20	-19	-16	-15
SC	-17	-26	-23	-17	-15
SD	-8	-12	-11	-8	-7
TN	-41	-66	-60	-45	-39
TX	-168	-243	-218	-167	-154
UT	-31	-45	-38	-25	-30
VT	-3	-4	-4	-3	-3
VA	-60	-93	-87	-69	-64
WA	-44	-66	-62	-48	-42
WV	-19	-32	-29	-22	-20
WI	-67	-110	-102	-77	-70
WY	-12	-17	-15	-10	-12
US	-2,704	-4,152	-3,775	-2,876	-2,690

CHANGE IN INDUSTRIAL GAS CONSUMER COSTS
Millions of $

	2004	2005	2006	2007	2008
AL	-148	-215	-192	-142	-143
AZ	-13	-17	-13	-10	-12
AR	-73	-89	-88	-74	-73
CA	-650	-942	-792	-626	-705
CO	-58	-67	-56	-30	-43
CT	-22	-32	-29	-25	-25
DE	-18	-26	-23	-18	-17
DC	0	0	0	0	0
FL	-56	-75	-63	-41	-49
GA	-102	-132	-118	-79	-91
ID	-25	-30	-23	-18	-21
IL	-211	-305	-246	-186	-191
IN	-217	-317	-252	-193	-198
IA	-71	-99	-80	-62	-64
KS	-73	-91	-84	-66	-66
KY	-71	-107	-92	-70	-71
LA	-560	-701	-691	-563	-552
ME	-11	-16	-14	-12	-11
MD	-24	-32	-24	-17	-20
MA	-46	-69	-63	-58	-59
MI	-166	-240	-201	-150	-151
MN	-76	-107	-90	-71	-69
MS	-75	-114	-95	-72	-74
MO	-50	-69	-55	-42	-43
MT	-8	-9	-8	-6	-6
NE	-29	-40	-31	-24	-25
NV	-6	-6	-2	-2	-4
NH	-7	-9	-9	-7	-7
NJ	-40	-60	-49	-47	-42
NM	-6	-1	-5	-10	-19
NY	-34	-52	-40	-45	-38
NC	-60	-78	-65	-42	-49
ND	-18	-25	-21	-16	-16
OH	-228	-341	-277	-209	-210
OK	-95	-115	-100	-83	-86
OR	-66	-74	-82	-74	-74
PA	-146	-213	-184	-149	-135
RI	-1	-3	-3	-4	-4
SC	-60	-77	-68	-46	-51
SD	-3	-4	-3	-2	-3
TN	-89	-136	-116	-88	-91
TX	-1,522	-1,857	-1,803	-1,485	-1,443
UT	-30	-35	-26	-15	-20
VT	-3	-4	-4	-3	-3
VA	-48	-64	-55	-39	-44
WA	-71	-78	-89	-81	-79
WV	-33	-43	-39	-27	-29
WI	-113	-164	-134	-105	-106
WY	-28	-30	-17	-10	-16
US	-5,562	-7,407	-6,611	-5,227	-5,344

CHANGE IN POWER GENERATION GAS CONSUMER COSTS
Millions of $

	2004	2005	2006	2007	2008
AL	-133	-246	-190	-422	-385
AZ	-162	-191	-126	-143	-127
AR	-27	-73	-39	-36	-38
CA	-1,090	-1,898	-1,820	-2,186	-2,312
CO	-55	-40	-23	-31	-24
CT	-67	-105	-103	-124	-129
DE	-40	-67	-96	-119	-170
DC	0	0	0	0	0
FL	-648	-963	-1,018	-1,001	-1,026
GA	-130	-229	-195	-288	-263
ID	-21	-27	-31	-37	-38
IL	-89	-100	-122	-140	-129
IN	11	9	3	28	3
IA	-2	-13	-15	-21	-23
KS	-18	-29	-21	-18	-18
KY	-35	-69	-47	-106	-94
LA	-124	-224	-162	-145	-147
ME	-71	-101	-87	-75	-69
MD	-37	-54	-46	-85	-82
MA	-176	-281	-251	-296	-280
MI	-99	-131	-112	-73	-86
MN	-8	-36	-38	-42	-45
MS	-48	-174	-111	-74	-102
MO	-23	-51	-63	-80	-94
MT	-28	-48	-57	-62	-75
NE	-3	-18	-18	-19	-21
NV	-231	-395	-502	-632	-730
NH	-2	-4	-3	-4	-3
NJ	-183	-199	-204	-207	-234
NM	-38	-39	-38	-40	-37
NY	-431	-497	-473	-554	-545
NC	-48	-94	-72	-141	-126
ND	0	0	0	0	0
OH	70	67	59	100	53
OK	-84	-152	-95	-87	-90
OR	-144	-160	-196	-179	-179
PA	-67	-82	-144	-210	-326
RI	-85	-133	-126	-149	-149
SC	-38	-74	-67	-90	-82
SD	1	-17	-15	-16	-15
TN	-37	-72	-43	-117	-103
TX	-1,550	-1,507	-1,706	-1,846	-1,805
UT	-27	-17	-26	-28	-29
VT	-1	-2	-1	-1	-1
VA	-25	-42	-34	-58	-54
WA	-100	-100	-126	-108	-110
WV	10	12	11	20	10
WI	-28	-30	-31	-32	-31
WY	-5	-6	-5	-5	-6
US	-6,170	-8,702	-8,621	-9,973	-10,366

Appendix C-Changes in Natural Gas Consumption, Price and Expenditures for National EE/RE Scenario

The result for the base-case and the four policy scenarios are available in Microsoft Excel format on the ACEEE web site at: http://aceee.org/energy/efnatgas-study.htm.

G437-287
Thank you for providing the testimony.

Exhibit 5

G437-287

Addendum A: Synapse Energy Economics Comments

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Establish Policies and Rules to Ensure Reliable, Long-Term Supplies of Natural Gas to California	; ; ; ;	Rulemaking 04-01-025

Comments of Synapse Energy Economics on the California Natural Gas Utilities' Phase 1 Proposals

Prepared for:
Ratepayers for Affordable Clean Energy

Prepared by:
David Schlissel, Amy Roschelle, Bruce Biewald,
David White and Tim Woolf
Synapse Energy Economics
22 Pearl Street, Cambridge, MA 02139
www.synapse-energy.com
617-661-3248

March 23, 2004

Introduction

The Ratepayers for Affordable Clean Energy ("RACE") requested that Synapse Energy Economics, Inc. ("Synapse") review the California Public Utilities Commission's ("Commission") Order Instituting this proceeding and the proposals expected to be submitted by Pacific Gas and Electric Company ("PG&E"), Southern California Gas Company ("SoCalGas"), San Diego Gas and Electric Company ("SDG&E"), and Southwest Gas Corporation. (hereinafter "California's natural gas utilities") RACE also requested that Synapse evaluate whether the Commission should pre-approve full cost recovery of contracts between the natural gas utilities and liquid natural gas ("LNG") suppliers and the costs of interconnecting their systems with LNG facilities.

This report presents Synapse's comments on the Phase 1 Proposals submitted by the natural gas utilities and identifies a number of actions the Commission should initiate to assure that in coming years there will be adequate supplies of natural gas in California at reasonable rates and with the lowest possible environmental impact.

Synapse Energy Economics

Synapse Energy Economics, Inc. provides research, testimony, reports and regulatory support to consumer advocates, environmental organizations, regulatory commissions, state energy offices, and others. The company was founded in May 1996 to specialize in consulting on electric industry issues.

We assess the many public policy implications of electricity industry planning, regulation and restructuring, with an emphasis on consumer and environmental protection. Our work covers various inter-related issues pertaining to restructuring, such as market power, stranded costs, performance-based ratemaking, reliability, mergers and acquisitions, divestiture plans, energy efficiency, renewable resources, consumer aggregation, power plant economics, environmental disclosure, and regulation of distribution companies. Our research frequently incorporates economic analyses and computer modeling of electricity generation facilities.

Synapse works for a wide range of clients throughout the US, including Attorneys General, Offices of Consumer Advocates, Public Utility Commission staff, a variety of environmental groups, foundations, the Environmental Protection Agency, the Department of Energy, the Department of Justice, the Federal Trade Commission, the National Association of Regulatory Utility Commissioners, and others.

Additional information regarding Synapse Energy Economics, its qualifications, staff, clients, projects and reports are available on-line at www.synapse-energy.com.

Conclusion and Recommendations

The Commission should not adopt the fundamental changes in traditional gas ratemaking policy presented in the Phase 1 Proposals submitted by the natural gas utilities that would allow for pre-approval of cost recovery for capacity acquisitions involving supplies from proposed LNG facilities and for the costs of building interconnections with such

facilities. In general, there should be no guarantees of full rate recovery of gas utility capacity acquisitions or related interconnection investments in the absence of:

- a showing that the utility explored and considered all reasonable supply and demand side alternatives, including energy efficiency and the use of renewable energy sources;
- a showing that the utility used a methodology that recognizes both the economic and environmental benefits and costs of such alternatives; and
- a showing that the proposed new resources are absolutely essential for reliable service and are clearly and materially superior on a societal least cost basis.

These required evaluations should take into account the economic benefits that reduced consumption provides by reducing the market power of gas and electricity suppliers, tempering volatility of gas and electric market prices, and reducing clearing prices in gas and electric markets, especially at times of highest prices.

Therefore, in place of approving regulatory changes proposed by the natural gas utilities, the Commission should expeditiously initiate a gas integrated resource planning process that would include participation by a broad range of stakeholders. In addition, the Commission should work with the California Energy Commission ("CEC") (1) to ensure that comprehensive California-specific analyses of cost-effective gas energy efficiency measures are completed expeditiously and (2) to dramatically increase funding of gas energy efficiency programs and related efforts regarding improving building and appliance standards. The appropriate regulatory policies for addressing the issues raised by the Commission in the Order Instituting Rulemaking ("OIR") in this proceeding cannot be determined without considering the potential for such cost-effective gas energy efficiency measures and without resolving the related questions on energy efficiency being addressed in Rulemaking 01-08-028.

The Commission also should work with the CEC to ensure that California's aging power plants are either repowered or replaced by more efficient generating facilities.

Finally, the Commission should ensure that there are strong affiliate transaction rules in place to govern negotiations and interactions between the California natural gas utilities and any affiliates supplying LNG.

Summary of Comments

The above conclusion and recommendations are based on the following comments:

Comment No. 1 - California's natural gas utilities have requested substantial and significant changes in traditional ratemaking and regulatory oversight of capacity acquisition and investment decisions.

Comment No. 2 - The natural gas utilities have provided no evidence that the fundamental changes in regulatory policies and oversight that they have proposed are needed or will provide benefits for ratepayers.

Comment No. 3 - The gas utilities' proposals would allow for only minor stakeholder input or review of their gas capacity acquisition decisions.

Comment No. 4 - The Commission should not be rushed into approving by this summer the fundamental changes in natural gas regulation that have been proposed by the natural gas utilities.

Comment No. 5 - Portfolio Management is the appropriate approach for securing adequate supplies of natural gas at reasonable rates.

Comment No. 6 - Commission oversight is critical to achieving the goals of portfolio management.

Comment No. 7 - Conservation and renewable energy should be the cornerstone of California's plan for meeting future natural gas needs.

Comment No. 8 - The future demand for natural gas can be significantly reduced through the Implementation of more extensive electric energy efficiency programs and the Acceleration of the state's Renewable Portfolio Standard from 2017 to 2010.

Comment No. 9 – Future natural gas demand also can be reduced significantly by the repowering or retirement of California's aging power plants.

Comment No. 10 - There is a significant potential for reducing both core and non-core natural gas demand.

Comment No. 11 - PG&E's proposal that ratepayers continue to pay for existing facilities that are used less due to the addition of new supply sources or system capacity is contrary to established regulatory policy.

Methodology

Synapse has reviewed in detail the Commission's OIR and the proposals submitted by the natural gas utilities. Synapse also has reviewed the projections of future electricity and natural gas supplies and demands prepared by the natural gas utilities and the CEC. In addition, Synapse has reviewed the assessments, by the CEC and others, of the potential for electricity and gas demand reductions through increased funding of efficiency programs and acceleration of the state's Renewable Portfolio Standard.

This Report also relies on the results of earlier Synapse work including, most particularly, analyses of the benefits of repowering older, inefficient power plants[1]; reviews of electricity supplies and demands in the Desert Southwest and WECC[2]; modeling studies of the interconnected WECC system as part of the development of a plan for the implementation of energy efficiency and renewable resources in seven Interior West

[1] For example, see the testimony of David Schlissel in Cases 99-F-1627 and 00-F-1356 before the New York State Board on Electric Generation Siting and the Environment.

[2] For example, see the testimony of David Schlissel in Arizona Public Service Commission Dockets Nos. E-01345A-01-0822 and E-01345A-03-0437.

states[3]; and a study on the need for, the benefits of, and the development of portfolio management strategies for procuring electricity resources.[4]

Comment No. 1: California's natural gas utilities have requested substantial and significant changes in traditional ratemaking and regulatory oversight of capacity acquisition and investment decisions.

In their Phase 1 proposals the California Natural Gas Utilities have requested substantial changes in the Commission's established ratemaking practices and policies related to cost recovery and the oversight of the natural gas capacity acquisition and investment decisions.

PG&E

PG&E has proposed that all pipeline, storage and LNG contracts falling within a Commission-approved Capacity Commitment Range would be pre-approved for cost recovery.[5] PG&E proposes to hold firm annual interstate and intrastate transportation capacity between 1000 MDth/day and 1200 MDth/day.[6] During the summer months, PG&E would hold between 750 and 850 MDth/day of intrastate capacity. PG&E also would hold between 40 and 46 MMDth of storage capacity, which is higher than its current storage inventory holding of 33.5 MMDth.

PG&E emphasizes that all commitments within this pre-approved Capacity Range would be deemed reasonable and fully recoverable in rates for any of the following:

- Any existing interstate, intrastate, and storage capacity;
- Individual interstate, intrastate, storage capacity, and LNG supply contracts with terms of three years or less;
- Individual interstate, intrastate, storage capacity, and LNG supply contracts with terms of more than three years and quantities less than or equal to 100 MDth/day or 3 MMDth of storage; and
- Interstate, intrastate, storage capacity, and LNG supply maintained by the exercise of ROFR options (in response to other shippers' bids) or evergreen terms.[7]

For capacity commitments that fall outside of these terms, and for all capacity in excess of PG&E's current holdings that would be acquired initially to meet the standards

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3 *A Balanced Energy Plan for the Interior West*, forthcoming, prepared by Synapse, Western Resources Advocates and Tellus Institute for the Hewlett Foundation.

4 *Portfolio Management: How to Procure Electricity Resources to Provide Reliable, Low-Cost, and Efficient Electricity Services to All Retail Customers*," prepared for the Regulatory Assistance Project and the Energy Foundation, October 2003.

5 *Phase 1 Proposals and Data Response of Respondent Pacific Gas and Electric Company*, dated February 24, 2004, at page 10.

6 Ibid, at page 8.

7 Ibid., at page 12.

established by the Commission, PG&E proposes to file an Expedited Capacity Advice Letter after consultation with the ORA, TURN, and the Energy Division.[8] PG&E's proposed Expedited Capacity Advice Letter procedure would allow ten days for protests and comments and three days for replies, and would seek Commission approval within 21 days of the filed date. However, PG&E does not specify the precise nature of this "consultation with the ORA, TURN and the Energy Division" and whether it would require approval from some or all of these organizations before it sought Commission approval.

PG&E also proposes that utilities be deemed in compliance with the pre-approved Capacity Range if the range is not exceeded for a cumulative period of six months in any 36-month period.[9] Consequently, under PG&E's proposal, it could exceed the pre-approved Capacity Range for 29 months of any 36-month period and still be deemed to be in compliance with the pre-approved Range.

In addition, PG&E proposes a policy change in that currently, PG&E requires interstate pipelines and third-party storage providers to build their own facilities to PG&E's system and pay PG&E for its costs to build the interconnect and related system changes. This policy would be changed so that PG&E would build the facilities necessary to transport the gas from the LNG facility (or another utility's or pipeline's facilities interconnected to the LNG facility) to PG&E's existing gas transmission and distribution network.[10]

PG&E further proposes that if it needs to build new intrastate facilities to connect to a new supply source, such as an LNG terminal, the certificate approval process must guarantee recovery of all of its reasonable costs. This change would modify or eliminate the requirement in Public Utilities Code Section 1005.5 that, for projects expected to exceed $50 million in cost, the Commission must specify a maximum reasonable and prudent cost for the facility, subject to revision for reasonable additional costs.[11]

Finally, PG&E proposes that ratepayers continue to pay the costs of any existing PG&E transmission or storage facilities that are being used less due to the addition of new supply or capacity.[12]

SoCalGas/SDG&E

SoCalGas and SDG&E have submitted capacity acquisition pre-approval proposals that were in many ways similar to PG&E's proposals.

SoCalGas proposes hold firm interstate capacity within a Commission-approved Transportation Capacity Commitment Range that averages between 80 percent and 110 percent of the forecasted core procurement portfolio's average temperature year daily demand during non-winter months and averages an amount between 90 percent and 120

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8 Ibid, at page 12.

9 Ibid, at page 11.

10 Ibid, at page 15.

11 Ibid, at page 16.

12 Ibid, at page ES-2.

percent of this demand during the winter months.[13] After consultation with the ORA, TURN, and the Energy Division, and with ORA's approval, interstate capacity commitments within this Commitment Range would be deemed reasonable and fully recoverable in rates in the event that any one of the following criteria is satisfied:

- Interstate capacity contracts with terms of more than three years and quantities les than or equal to 100 MMcf/d; or
- Interstate capacity contracts acquired by the exercise of ROFR options in response to posted bids by other shippers.

Multiple contracts with substantially similar material terms (i.e., price, contract term, and receipt and delivery points) on one pipeline would be aggregated to determine compliance with the limits of the Authorized Capacity Commitment process.[14]

Like PG&E, SoCalGas proposes an expedited Capacity Advice Letter approval process for commitments outside the limits of the Authorized Capacity Commitment process.[15]

SDG&E's proposal is almost exactly the same as that of SoCalGas. The only difference is that SDG&E proposes that interstate capacity commitments be deemed reasonable and fully recoverable in rates if any one of the following criteria is satisfied:

- Interstate contracts with terms of three years or less;
- Interstate contracts with terms of more than three years and quantities less than or equal to 20 MMcf/d; or
- Interstate capacity contracts acquired by the exercise of ROFR options in response to posted bids by other shippers.[16]

As in SoCalGas' proposal, multiple contracts with substantially similar material terms (i.e., price, contract term, and receipt and delivery points) on one pipeline would be aggregated to determine compliance with the limits of the Authorized Capacity Commitment process.

In addition, SoCalGas and SDG&E also proposed that the Commission adopt a policy that to the extent that the benefits to all utility customers of access to new gas supplies are greater than the cost to utility customers, the costs of expanding utility backbone facilities necessary to accommodate new gas supplies should be rolled-in to the utilities' system wide transportation rate. Below a certain cost threshold, it would be presumed that benefits exceed costs.[17] SoCalGas and SDG&E then proposed to roll-in new or expanded

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13 *Proposals of San Diego Gas & Electric Company and Southern California Gas Company*, dated February 24, 2004, at page 30.

14 Ibid, at page 31.

15 Ibid, at page 31.

16 Ibid, at page 43.

17 Ibid, at page 70.

supply access infrastructure costs up to $100,000 per MMcf/d of added supply capacity, with a maximum cost for all projects of $200 million.[18]

SoCalGas and SDG&E also made a number of specific proposals concerning related to Otay Mesa access and integration of their transmission systems.[19]

Comment No. 2: The natural gas utilities have provided no evidence that the fundamental changes in regulatory policies and oversight that they have proposed are needed or will provide benefits for ratepayers.

Apart from some general, unsupported statements about the need to move quickly to secure access to new gas and a few comments about the short amounts of time that capacity release transactions are posted on a pipeline's Electronic Bulletin Board, the gas utilities' Phase 1 Proposals are devoid of any concrete evidence about why the significant changes they seek in Commission oversight of procurement decisions are needed or would be expected to produce benefits for ratepayers. There is no showing in any of the Proposals that the utilities' past gas capacity acquisition efforts were hampered in any way by the existing regulatory scheme. There also is no showing that future capacity acquisitions would be more difficult or expensive due to the absence of pre-approval for cost recovery or by a requirement to provide subsequent proof to the Commission that such acquisitions were prudent under the circumstances.

SoCalGas and SDG&E did present the results of an analysis by the Cambridge Energy Resource Associates ("CERA") that they claim shows the potential magnitude of commodity price reductions that are expected to result from access to LNG supplies.[20] At Synapse's request, RACE requested a copy of the CERA analysis, and the related workpapers, in order to evaluate the study's methodology, assumptions and conclusions. Unfortunately, SoCalGas and SDG&E refused to provide copies of either the requested analysis or the related workpapers without a non-disclosure agreement.[21] Because such an agreement could not be negotiated in the short time frame allowed for the preparation of these comments, Synapse has not had any opportunity to assess the reasonableness of the claims made by the companies concerning the CERA report.[22]

It is easy to see why the gas utilities favor their proposals: apart from some unspecified "consultation" by TURN, there would not be any meaningful opportunity for stakeholders other than the ORA and Commission staff to question the reasonableness of their capacity acquisition decisions. At the same time, the gas utilities would not face

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18 Ibid, at page 70.

19 Ibid, at pages 82 and following.

20 *Proposals of San Diego Gas & Electric Company and Southern California Gas Company*, dated February 24, 2004, at page 9.

21 Responses of SoCalGas and SDG&E to Questions Nos. 4 and 11 of RACE's First Data Request.

22 SoCalGas and SDG&E also objected to another seven of the other fifteen questions contained in RACE's First Data Request to the companies. PG&E has to date failed to provide answers to any of the questions submitted by RACE to that company.